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RESEARCH PAPER

Evaluation of heterosis and inbreeding depression for seed yield and its components in castor (*Ricinus communis* L.)

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Abstract : Heterobeltiosis and standard heterosis was studied by using generation mean analysis involving six generations, namely P_1, P_2, F_1, F_2, BC_1 and BC_2 of five crosses of castor (*Ricinus communis* L.). The high magnitude of heterobeltiosis was observed in crosses JP 101 x SKI 215(86.51 %) and JP 96 x JI 368 (25.90 %) for seed yield per plant. Among the five crosses studied, JP 96 x JI 368 (52.20 %) exhibited the highest significantly positive standard heterosis over the check hybrid (GCH-6) for seed yield per plant followed by JP 101 x SKI 291 (21.24 %) and JP 101 x SKI 215 (9.00 %). Hybrids showing high positive heterosis for seed yield also depicted high to moderate heterotic effects for majority of its component traits in desirable direction. The magnitude of inbreeding depression varied from cross to cross indicating influence of genetic constitution of crosses. Either low or moderate amount of inbreeding depression in desired direction was found for most of the traits. Association of high heterosis with high inbreeding depression was observed for seed yield and some of its component traits. Most of the crosses in majority of the traits showed positive inbreeding depression indicated the presence of dominance gene effects. Suitable breeding strategies were suggested for the improvement of seed yield in castor.

Key Words : Heterosis, Inbreeding depression, Castor

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